

REMARKS

Claims 3, 4, 7-16, 21-26 and 32-34 are pending in the above-identified application. Support for the change to claim 12 is found in paragraph [0086] at page 28 of the specification. Support for new claim 33 and 34 is found at page 23, paragraph [0074] and page 26, paragraph [0085] of the specification.

Issues under 35 USC 103(a)

Claims 12, 13, 16 and 32 have been rejected under 35 USC 103(a) as being unpatentable over Sugimori '006 (US 6,670,006) in view of Kumagai '108 (US 2003/0088108) and Tominaga '818 (US 4,444,818).

Claims 12-16 and 32 have been rejected under 35 USC 103(a) as being unpatentable over Friedrich '946 (US 5,340,946) in view of Sugimori '006, Kumagai '108 and Tominaga '818.

The above rejections are traversed based on the following reasons.

Distinctions over Sugimori '006, Kumagai '108 and Friedrich '946

Sugimori '006 discloses an epoxy resin composition for fiber reinforced plastics which includes (A) a bisphenol A-type epoxy resin, (B) an epoxy resin having oxazolidone rings, and (C) a curing agent which may be an imidazole compound as noted at column 5, lines 21-30. Kumagai '108 discloses imidazole/carboxylic acid derivatives used to improve adhesion between a metal or inorganic material and a resin. Friedrich '946 discloses an adhesive composition which includes (a) a polymeric resin having a Mn of at least 10,000; and (b) a curing agent.

Sugimori '006, Kumagai '108 and Friedrich '946 all fail to disclose the employment of a thermoplastic resin in combination with an imidazole silane compound as recited in independent claims 12 and 15, for example. Although Sugimori '006 discloses some examples of thermoplastic resins at column 5, lines 35-55, these resins do not encompass the resins recited in claim 12. Both Sugimori '006 and Friedrich '946 fail to disclose or suggest the use of an imidazole silane compound as recited in the presently elected claims 12-16 and 32. There fails to be any suggestion or basis for a motivation to one skilled in the art to employ an imidazole silane compound as used in the present invention based on the disclosures of Sugimori '006 and Friedrich '946. Therefore, significant patentable distinctions exist between the present invention and all of the Sugimori '006, Kumagai '108 and Friedrich '946 references such that the above rejections based thereon must be withdrawn.

Distinctions over Tominaga '818

Tominaga '818 discloses a thermosetting adhesive sheet which includes a thermosetting resin sheet-shaped prepreg with a reinforcing material embedded therein, and a flattened tubular material provided on one side of the prepreg, as noted at column two, lines 28-36. Tominaga '818 further discloses that a thermoplastic resin may be added to increase sheet moldability as noted at column 4, lines 56-64.

Tominaga '818 fails to disclose or suggest employment of a thermoplastic resin in the form of particles as in the prepreg of the presently claimed invention. Tominaga '818 further fails to disclose or suggest the use of an imidazole silane compound as in the presently claimed prepreg. In addition, there fails to be any basis for a motivation to one skilled in the art to selectively combine an imidazole compound from Tominaga '818 with a thermosetting resin from Sugimori '006 and a thermoplastic resin from Tominaga '818. The Examiner has improperly merely identified some helpful properties mentioned in each of these references and then made the unsupported assumption that one skilled in the art would have decided to selectively combine certain components from each of these references together into a new combination of components. The Examiner has failed to actually identify a basis for a suggestion or motivation to one skilled in art to actually form such a combination. In fact, Tominaga '818 fails to hint at using an imidazole silane compound or using a thermoplastic resin in the form of particles, while the other cited references fail to disclose or suggest this sub-combination or the presently claimed prepreg requiring the other claimed elements including reinforcing fibers and a thermosetting resin component.

In addition to the above, all of the above-cited references fail to recognize the advantageously improved adhesive properties exhibited when imidazole silane compounds are used, especially with respect to titanium or titanium alloys, as described in paragraphs [0058]-[0064] of the specification. In addition, note that the comparative test results summarize in Table 2 and discussed at pages 43-58 of the present specification provide further evidence of the improved adhesive properties exhibited by the present invention. In this regard, note that Examples 9, 13 and 15 (containing a thermoplastic resin) exhibited advantageously improved adhesive properties over Comparative Examples 1-4 as noted in paragraph [0186]. Consequently, the above rejections must be withdrawn.

It is submitted for the reasons above that the present claims define patentable subject matter such that this application should now be placed in condition for allowance.

If any questions arise in the above matters, please contact Applicant's representative, Andrew D. Meikle (Reg. No. 32,868), in the Washington Metropolitan Area at the phone number listed below.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

Dated: MAY 10 2011

Respectfully submitted,

By 

Andrew D. Meikle

Registration No.: 32868

BIRCH, STEWART, KOLASCH & BIRCH, LLP

8110 Gatehouse Road, Suite 100 East

P.O. Box 747

Falls Church, VA 22040-0747

703-205-8000